

*Special
reports*

Box 509
Uvalde, Texas
May 21, 1936

STATEMENT TO DR. LAAKE REGARDING
SCREW WORM SITUATION IN ARIZONA
AND CALIFORNIA

Larvae have been taken from cases in practically all parts of southern and central Arizona. Specifically they have been bred from Douglas, Fairbanks, Nogales, Tucson, Safford, Duncan, St. Johns, Winslow, Holbrook, Prescott, Florence, Wilcox, Phoenix, Wickenburg, Seligman, Kingman, Buckeye and Bryce. No screw worm cases have ever been found in the section around Williams and Flagstaff nor in the area around the Grand Canyon. The area around Grand Canyon has not been entirely worked nor has any work been done at all north of Grand Canyon or the Colorado river along Lees Ferry. The area about Flagstaff and Williams has been worked at quite thoroughly several different times of the year.

Before the climatological studies were made it was surprising how so great a number of cases of screw worms were usually found even early in the season about Winslow and Holbrook. Judging from the past work this seemed to be the area in which most screw worm cases are reported normally in Arizona, although some of the officials have reported that cases were worse in the area about Douglas and Bisbee than in any other section of the state.

Screw worm cases have been found in the Salt River from Phoenix to Yuma and around Gila Bend at practically all times of the year, and cases are worse in this area usually in November and

December when sheep are brought down from the escarpment for lambing. Along the escarpment from Safford around to Seligman cases are usually worse the latter part of July and into September. This is during the rainy season for this section.

California has not been very thoroughly covered in making screw worm observation, but in the Coachella and Imperial Valleys observations have been made over a period of five or six years and during all seasons of the year. Like Salt River Valley, Arizona, these Valleys have a few cases of screw worm at practically all times of the year; but at no time are they considered a pest of high degree. Inquiry and observations were made during the time the blowfly parasite status was being made in the San Joaquin Valley, Salinas and Owens Valleys and also along the west coast from San Diego to San Francisco. A case of worms was found at Fresno during the early part of June and produced Cochliomyia adults. Reports indicated that the screw worm was a considerable pest in some of the escarpment areas in San Joaquin Valley during certain years. Few cases were reported in Salinas Valley, but cases of worms are practically unknown along the coast in any area.

It appeared that Owens would be an ideal place for screw worm cases, but inquiry indicated that no cases ever appeared in that Valley. It would be well to make quite thorough investigation in this Valley as well as in the Kern Canyon, especially in the broad Valley about Kernville.

These are the only areas in California that have been worked. Considerable more work should be done along the Colorado Valley and up in the state of Nevada, as climatic data indicates that the flies should be a considerable pest in that area, especially from Blythe to Parker and north.

The climatic data as we have worked it up indicates that screw worm cases should appear along the Colorado river from Yuma to Grand Junction, Colorado, and I believe that from the conditions found on the Little Colorado River in northern Arizona that we might possibly have Cochliomyia overwintering in some areas of the Grand Canyon, possibly as far north as to Lees Ferry. From conversation and observation it has been indicated that the flies overwinter as far north as Needles, California, and Kingman, Arizona.

The most interesting part of this work has been the fact that all larvae collected from wounds in any of these areas indicated ^{Arizona} in Colorado or California have produced Cochliomyia adults, although at times no Cochliomyia adults were observed at the wound and large numbers of Phormia.

Climatic data indicates that screw worms should be a considerable pest in Sacramento Valley as far north as Redding. While we have considered that the climate was possibly too moist for development of flies along most of the west coast, since the climatic data has been worked up it is indicated that temperatures during at least most of the year are too low for Cochliomyia to breed, although the survey work indicated that there were very few flies in that area of

any species. In fact the survey work indicated that there were more flies in the arid region of California and Arizona than in any other part of the United States, or at least in parts where the survey work was done.

HIGHLIGHTS OF 1944 SCREWORM SURVEY

by

Harold M. Johnston

INTRODUCTION

I believe the most outstanding development of the screwworm survey is the introduction of Formula 62 as the best screwworm remedy, because Smear 62 goes farther toward controlling screwworms than any other preparation. Formula 62 is the most used and best known remedy among the stockmen of the Southwestern States of Texas, New Mexico, Arizona, and Oklahoma. A year ago Smear 62 was not so generally known or stocked in the Midwestern States of Missouri, Illinois, Indiana, or Michigan where I worked. This year Formula 62 is generally known in the Midwestern States of Iowa, Illinois, and Indiana. The remedy is not stocked in every county in these states because screwworms seldom cause trouble in many of the counties, but Smear 62 is now available on short notice to any place in the Middle West. The big problem heretofore, I believe, has been distribution of Formula 62. It is necessary to have widespread distribution of Smear 62 in order to have widespread use of the remedy. Globe Laboratories of Fort Worth, Tex., now have distribution of their Formula 62 through many drug jobbers, the largest of which is McKesson & Robbins, with branches in all parts of the United States. The past 2 years the following companies have been established as manufacturers of Smear 62:

Anchor Serum Company,
Wilke Laboratories,
Dr. Salsbury Laboratories,
Corn Belt Laboratories,
Fort Dodge Serum Company,
Fitman-Moore,

St. Joseph, Mo.
West Plains, Mo.
Charles City, Iowa
East St. Louis, Ill.
Fort Dodge, Iowa
Indianapolis, Ind.

The last three companies are veterinary supply houses exclusively. It is necessary to have veterinary supply companies manufacture Formula 62 in order to get veterinarians to use the remedy because veterinarians buy from exclusive veterinary supply houses. They consider unethical companies that sell their products to laymen. Up to last year (1943) not many veterinarians were using Smear 62 as a screwworm remedy, but the users of the remedy among veterinarians are now in the majority.

Such remedies as chloroform, Kreso Dip, cresylic ointment, and other proprietary screwworm remedies are rapidly falling by the wayside, but there are still certain areas where proprietary concoctions have larger sales than Smear 62, mainly because Formula 62 has not been thoroughly tried.

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A great deal of work remains to be done in pointing out the difference between C. americana and other maggots, especially in the northern states where screwworms are not so common. There is confusion among some county agents and veterinarians and stockmen in Iowa, Illinois, and Indiana as to identification of the true screwworm.

Formula 62 is recommended exclusively by the Extension Services in Texas, New Mexico, Arizona, Oklahoma, Kansas, Iowa, Missouri, Illinois, and Indiana. However, it is well to keep stressing the importance of Smear 62 as the best screwworm control remedy, especially as a preventive measure. Restriction of livestock operations to periods when screwworm flies are absent or less troublesome is a very important control measure.

Highlights of the screwworm survey, by states, are as follows:

TEXAS

The area covered in South Texas and West Texas in April was not heavily infested except in the Rio Grande Valley. Smear 62 is the most-used remedy by ranchers in this region, probably being used by up to 90 percent of the stockmen, and recognized as the best ever developed for screwworm treatment and prevention. Some complaint was encountered among stockmen about Smear 62 not being as good as when it was first introduced in 1941, the most frequent criticism being that the product was too thin. This may be due to inferior quality war-time materials or to variation in the quality of ingredients used by the various manufacturers. Restriction of livestock practices to periods of less danger from screwworm infestation is practised by most ranchers in Texas. Many stockmen are adopting the practice of controlled breeding so that young will be born in periods of less fly trouble.

NEW MEXICO

Very little screwworm infestation was found in the southernmost counties in New Mexico the latter part of April while on the way to Arizona. Smear 62 is the most-used remedy and is available through the New Mexico Cattle Raisers' Association, Albuquerque, and through local drug stores. Excellent cooperation was obtained from ranchers and county agents and others contacted. Extension officials were a little hesitant about the program at first but finally saw the value of the survey work.

ARIZONA

Not a great deal of screwworm trouble was encountered in Arizona in May; however, screwworms did overwinter in the valleys in the lower altitudes around Tucson, Globe, Phoenix, and on southwest toward Yuma, Ariz. There were only a few scattered screwworm cases reported in these counties during the winter months. Extremes of climatic conditions exist in

Arizona due to the great differences in elevation, ranging from about 200 feet at Yuma to 6,900 feet at Flagstaff. Most of the screwworm trouble in Arizona occurs in the southern part of the state at the lower altitudes.

Formula 62 is the favorite screwworm remedy among stockmen, being used by perhaps 75 percent of the ranchmen. The largest source of supply for Smear 62 is the Arizona Cattle Growers' Association at Phoenix, Ariz., and their price of \$3.06 per gallon is the lowest retail price encountered on the survey. Cooperation of the extension personnel, ranchers, county agents, druggists, and others was excellent.

OKLAHOMA

Screwworm infestation was fairly well established by the time the Oklahoma survey was started the last week in June, but was epidemic in only three counties in the state. From reports of veterinarians, county agents, and stockmen it seems that screwworm trouble shows up in March and April due to livestock shipments from infested areas to the south, but for some reason these screwworms do not survive to reproduce. The majority of screwworm trouble in Oklahoma occurs later on, from July to late fall. Apparently early spring weather conditions are not favorable for development of screwworms in Oklahoma.

Formula 62 is the most-used screwworm remedy in Oklahoma although several proprietary remedies still have a large sale. The trend is to Smear 62 and in the next 2 years should supplant other remedies. Most veterinarians in Oklahoma use Formula 62 and praise it highly. It would be a good idea to establish a manufacturer of Smear 62 in Oklahoma to make the product more readily available. There has been a great increase in the use of Smear 62 in Oklahoma in 1944 compared to 1943, due in part to missionary work by the Extension Service.

Mr. Lloyd Noble, Ardmore, Okla., oilman, who operates cattle ranches in Oklahoma, New Mexico, and Kansas, is very much interested in progressive livestock practices and I am sure would be willing to cooperate on any livestock experiments. Turner Ranch at Sulphur, Okla., purebred Hereford breeders, would also cooperate on experimental work.

KANSAS

Screwworm infestation in Kansas was light in western and southern Kansas when the survey was started July 9. However, toward the end of the Kansas survey during the last of July and the first week in August, heavy

infestation was found in the Flint Hills region around Yates Center in Woodson County on up to Emporia, Kans., and east to Kansas City. Heaviest screwworm infestation in Kansas occurs from August on to freezing weather in late fall.

Smear 62 is generally used and stocked in Kansas. Perhaps 90 percent of the veterinarians in Kansas use Formula 62 since it has become available to them through veterinary supply companies.

There is confusion among some veterinarians, county agents, and stockmen, especially in western Kansas, as to the identity of the true screwworm. C. americana does not cause as much trouble in western Kansas as in eastern Kansas because western Kansas is predominantly a wheat country with small livestock population. No corn and very little feed of any kind is raised; therefore no livestock feeding is done. There are a few counties, too broken to be good farm land, where cattle are pastured in summer if there is any grass. Western Kansas is a semi-arid region with small rainfall. Most of the livestock in Kansas is in the eastern two-thirds of the state, where most of the screwworm trouble occurs. If good wheat pasture is obtained in the fall there is considerable pasturing of cattle through the winter on up to April in western Kansas. These cattle would come into western Kansas when the danger from screwworm infestation is about over and would leave in the spring before screwworms become prevalent. In the winter of 1943 very few cattle were brought into western Kansas because a good stand of wheat was not obtained in the fall. This fall (1944) western Kansas already has a good stand of winter wheat and wheat pasture buyers are competing with the feeders of the Middle West for livestock.

County Agent Frank G. Bieberly, Syracuse, Kearney County, Kans., reported 1,000 ewes brought into county from Texas the early part of May, in which there were 15 cases of screwworms, mostly in cuts and snags. The animals were treated promptly, thereby preventing a possible outbreak of screwworms.

Cooperation from extension officials, county agents, veterinarians, druggists, stockmen, and others in Kansas was excellent.

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Administration

(For P.M. Release April 21)

Washington, April 19, 1950

Severe Screwworm Outbreak May Occur in 1950:

Screwworm flies apparently are starting their most destructive and widespread year, entomologists of the U. S. Department of Agriculture said here today. Stockmen are warned by the Bureau of Entomology and Plant Quarantine that present screwworm conditions may bring about a difficult situation.

Screwworms are maggots of one of the most serious of all livestock pests. They are the larvae of the subtropical parasitic blowfly Callitroga americana. These flies usually occur every year in south and southwestern states, and move into northern areas only during outbreak years. Adult female flies deposit their eggs on wounds of all warm-blooded animals. When the eggs hatch a few hours later, the maggots feed on the flesh and make deep holes in the tissues. The flies lay more eggs on the wounds, and unless these are protected, the maggots increase in numbers, and the infested animal eventually dies.

Thousands of infested animals die every year in the southern United States where losses amount to millions of dollars. These losses are multiplied many times in years of widespread outbreak.

Entomologists of the Bureau urge that stockmen take the following steps to prevent losses of their livestock, to retard the spread of screwworm flies into uninfested portions of the country:

1. Inspect all livestock twice each week. Treat all wounds, infested or not, with Smear 62, or a similar approved screwworm remedy containing diphenylamine and benzol.
2. Postpone dehorning, branding, marking, castrating, or other operations leaving wounds during warmer months. If such operations are absolutely essential, keep the animals under close observation and treat wounds at regular intervals until healed.
3. Examine animals carefully before they are shipped, and treat all wounds

found. Dealers of livestock should inspect animals when delivered and treat wounds that may have become infested prior to, or during shipment.

Two large areas of screwworm infestation now are known to exist in southern United States, as based on surveys conducted recently by entomologists of the Bureau of Entomology and Plant Quarantine cooperating with county agricultural agents, entomologists, veterinarians, and others of all states in the involved areas. One area, in the southeast, covers southeastern North Carolina, most of South Carolina, two counties in Tennessee, all of Florida, all of Southern Georgia, the majority of Alabama, and a number of counties in east-central Mississippi. The entire central portion of Texas from the Lower Rio Grande Valley to the Oklahoma state line is infested. Surveys in California, Arizona, and New Mexico show that screwworms also overwintered in the southern portions of those states.

Favorable weather conditions last year enabled the flies to spread much farther north than usual and over much wider areas. Serious infestations developed for the first time in South Dakota and New Jersey. Mild winter weather did not kill the flies back to south Texas and Florida, their natural overwintering areas.

Entomologists of the Bureau point out that the number of infested animals may be few in some of the areas at the present time. But, they say the number of screwworm flies will increase rapidly as warm weather progresses, unless stockmen treat all screwworm infested animals. This will prevent screwworms from becoming flies which spread and infest other animals.

Screwworm flies spread hundreds of miles in a single season. Serious infestations result from shipping infested animals into uninfested areas. The South Dakota and New Jersey infestations of 1949 started when infested livestock were shipped north early in the spring.

Screwworm flies lay their eggs in any kind of a wound. Wounds most often found infested result from operations, shear cuts, wire cuts, snags, skin abrasions, and wounds caused by ticks and flies. Navels of new-born animals are often infested. The maggots become full-grown in about 5 days. Then they leave the wound and burrow into the ground, to emerge about 10 days later as adult flies ready to start the cycle over again.

SCREW-WORM SURVEY FOR THE WESTERN AREA OF THE
UNITED STATES FOR OCTOBER, 1950

E. W. Laake
U. S. D. A., Agr. Res. Adm.
Bureau of Entomology and Plant Quarantine

The screw-worm survey was completed during the month of October in New Mexico, Kansas, Oklahoma, Arkansas, and Louisiana. The survey will be discontinued until the latter part of February and March, when the area in which the screw-worm will survive the present winter will be determined.

In each state surveyed during the month of October the Bureau scout contacted the office of the director of extension, the state livestock extension specialist, the state entomologist, and the state veterinarian and county agents, veterinarians, dealers in livestock remedies, and some livestock owners in all counties surveyed.

Particular emphasis was placed on surveying counties or areas which had reported screw-worm infestations during the season. However, in most of the states surveyed during the month only a relatively small number of important livestock counties were surveyed. The screw-worm incidence and distribution as revealed by the survey in each of the states scouted are briefly as follows:

New Mexico:

Light infestations existed at the time of the survey in San Miguel, Quay, Colfax, and Union Counties. Reports by county agents and others indicated that the peak infestation of the year occurred during the latter part of August and the month of September, and involved from 1 to 1-1/2 percent of the total animal population in the four counties surveyed, all of which are located in the northeastern portion of New Mexico.

Kansas:

In the southwestern portion, which was not scouted earlier in the season when the first survey was made, light infestations were found in Seward, Finney, Scott, Ness, and Ford Counties. Reports from livestock owners, county agents, and others indicated that the peak of infestation, involving at least 1 to 1-1/2 percent of the total animal population in this area, occurred during September. The decrease in screw-worm infestations at the time of the survey was undoubtedly due to the low temperatures which prevailed early in the season.

Oklahoma:

Light to medium screw-worm infestations were found during the period of the survey in Harper, Woods, Garfield, Lincoln, Creek, Wagoner, and Cherokee Counties. County agents and others reported that the peak of the infestation in these counties and probably in all other counties through Oklahoma occurred in September, when approximately 1 to 1-1/2 percent of the total domestic animal population was reported to be infested. Screw-worm infestations at the time of this survey were rather high considering the lateness of the season.

Arkansas:

Light screw-worm infestations were found in Madison and Newton Counties and heavier infestations, involving from 1 to 1-1/2 percent of the total animal population, were reported in Stone, Independence, White, Jefferson, Grant, Drew, Chicot, and Ashley Counties. All of these counties reported that heavy infestations had occurred during September. The incidence in Chicot County was the heaviest reported in the State and exceeded 2 percent of the domestic animal population during the peak of the season.

Louisiana:

Infestations ranging from 1 to 1-3/4 percent of the total animal population were present at the time of the survey in Claiborne, Bienville, Richland, Caldwell, Winn, Natchitoches, Grant, St. Landry, Lafayette, Jefferson Davis and Calcasieu Parishes. All of these parishes reported even heavier infestations during the peak of the season, which occurred during the latter part of August and September, when the infestation in most of these parishes exceeded 2 percent of the total animal population.

A report, submitted to our scout by the State Veterinarian, Dr. F. B. Wheeler, who had contacted the parish agents in 31 parishes well-scattered throughout the State, indicated that screw-worm infestations in all but one of these parishes was heavier this year than during several previous years. Only St. Tammany Parish, in the extreme southeastern portion of the State bordering the Mississippi state line, reported no infestations during the season.

South Dakota:

During the latter part of October a very interesting and informative report was received from Dr. H. C. Severin, head of the Entomology-Zoology Department of the South Dakota State College at Brookings, South Dakota. Dr. Severin submitted a county map of the State, on which was indicated the counties in which cases of secondary worms and true screw-worms were found in wounds of domestic animals. Dr. Severin stated that all of the cases of screw-worms occurred during September and early October, and that the cases of secondary worms came to them earlier in the year.

Fly larvae removed from wounds of domestic animals and identified by Dr. Severin, revealed that C. americana was present in Ziebach, Sully, Hughes, Jones, Hanson, McCook, and Hutchinson Counties. Apparently the heaviest infestation occurred around Emery in Hanson County. Dr. Severin stated that: "We have had enough cold during the later part of October, so the screw-worm is no longer a problem with us."

The screw-worm infestation in Ziebach, Sully, Hughes and Jones Counties is in the same area where an extremely heavy infestation occurred last year. This area imports a considerable number of animals each summer from areas which are known to be infested with screw-worms. It is certain that all screw-worm infestations which were found in South Dakota this year were imported with infested animals, but due to the lateness of the importation and the early winter in this State, no serious incidence occurred.

Screw-worm Remedies:

An ample supply of screw-worm smear U. S. Formula 62 and a number of proprietary preparations were found to be available in all areas surveyed during the month.

Mr. New, our survey scout, reported that after the announcement of the development of the new screw-worm smear EQ 335, a great interest was manifested in the new smear by livestock specialists, county agents, and even by a number of livestock owners who had read the announcement released from Washington on October 17, 1950. Since that release our Kerrville, Texas station has been flooded with requests for more information on the new smear and when it would become available for general use.

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH ADMINISTRATION
BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE

INSECT PEST SURVEY

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SCREW-WORM SURVEY IN WESTERN UNITED STATES, 1950^{1/}

By E. W. Laake

Division of Insects Affecting Man and Animals

The annual survey of screw-worms, Callitroga americana (C. & P.), conducted by the Bureau of Entomology and Plant Quarantine in cooperation with Federal and State specialists was continued during 1950 in the western part of the United States usually affected. Early scouting was done in Texas, New Mexico, Arizona, and California to establish the winter-survival area of this insect. This fly is not known to overwinter in any other State west of the Mississippi, except possibly, and certainly only very rarely, in southwestern Louisiana. Later in the season the survey was extended to Kansas, Nebraska, South Dakota, Minnesota, Iowa, Illinois, Indiana, Missouri, Arkansas, Oklahoma, and Louisiana.

The survey to determine the winter-survival area revealed that the fly survived the unusually mild winter in approximately 132 counties in Texas and also in at least 3 counties in southwestern New Mexico, 9 counties in southern Arizona, and apparently 3 counties in southern California. The area in which the fly survived the winter extended from Houston, Tex., on the east to San Diego, Calif., on the west. In Texas the winter-survival area extended as far north as Wilbarger, Wichita, and Clay Counties on the Texas-Oklahoma border. The winter survival of the fly to the Oklahoma border extended the area at least 300 miles farther north than during any previous winter on record, and indicated a possible early and severe screw-worm year for 1950. Therefore, the United States Department of Agriculture on April 21 issued a press release warning livestock owners that the situation might become serious unless they promptly treated all screw-worm-infested animals. In order to retard the spread of screw-worms into uninfested

^{1/} Presented at the meeting of the Southwestern Branch of the American Association of Economic Entomologists at Dallas, Tex., March 1-2, 1951.

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portions of our country, entomologists of the Bureau urged that stockmen treat all wounds, infested or not, especially in animals that had been shipped from areas where screw-worms might be present, and postpone dehorning, branding, marking, castrating, and docking, all of which predispose animals to screw-worm attack, until after the warmer months of the year.

During July, August, September, and October the screw-worm survey was extended to States in the western region which usually become infested either as a result of the natural migration of the fly during each season or the introduction of infested animals. Each year since the screw-worm survey was started in 1943 serious infestations have resulted from the shipping of infested animals into uninfested areas. One such infestation occurred in South Dakota in 1949, when infested cattle were introduced early in the season.

In each State surveyed the Bureau scouts contacted the State Veterinarian or the State Entomologist or, if they were not available, their assistants, the State Director of Extension, the State Extension specialists, and particularly the county agent and local veterinarians in all counties surveyed. In addition, at least a few representative livestock owners in each county surveyed were interviewed in order to determine whether the screw-worm infestations reported were really screw-worms or merely blowflies or secondary species of wound-invading maggots.

Because the survey in most of the States was made before the close of the screw-worm season, it was not possible to obtain a complete picture of the situation. Subsequent reports were kindly furnished at the end of the year by State and Extension personnel and are included in the following brief report for each State.

Arizona -- The screw-worm overwintered in all of the southern counties in Arizona. By midsummer infestations were present in all counties in the State. Infestations in less than 1 percent of the domestic-animal population were reported in all the southern counties. Livestock owners in Yuma, Pima, and Pinal Counties reported that screw-worms had been troublesome the year round. In the northern part of the State infestations were reported to be light and present only during the summer season.

Arkansas -- Light screw-worm infestations were found in Madison and Newton Counties. Heavier infestations, in 1 to 1.5 percent of the total animal population, were found in Stone, Independence, White, Jefferson, Grant, Drew, Chicot, and Ashley Counties. All these counties reported that the heaviest infestations had occurred during September. The incidence in Chicot County was the heaviest reported

in the State and exceeded 2 percent of the domestic-animal population during the peak of the season. Reports received by Extension specialists indicated that screw-worms were common before the end of the season in nearly all counties in southwestern Arkansas.

California -- Screw-worm infestations involving at least 0.1 percent of the total domestic-animal population were found in Imperial, Riverside, San Diego, Kern, Stanislaus, and Tulare Counties. Scattered to light infestations were found in Solano, Yolo, and Sonoma Counties. County agents, veterinarians, and livestock owners in Riverside and Imperial Counties all reported screw-worm activity the year round. An early-season survey showed that the screw-worm fly survived the winter in both Riverside and Imperial Counties and apparently also in San Diego.

Illinois -- Light infestations of the screw-worm were found in Monroe, Jackson, Johnson, and Union Counties in August. Because the survey covered only a portion of the State, it is probable that some of the other counties were also infested.

Indiana -- Scattered to light infestations were found early in September in Owen, Greene, Lawrence, Daviess, Pike, Ripley, Tippecanoe, Bartholomew, Jennings, Washington, and Decatur Counties. Tippecanoe, Ripley, and Decatur Counties were the most northeastern counties found infested during this survey.

As a result of the previous year's experience, when a light to moderate outbreak covered most of the southern half of the State, livestock owners checked the spread and the abundance of this pest by using smear 62 on practically all cuts and other predisposing wounds as a prophylactic treatment. This commendable preventive practice probably contributed greatly to the low screw-worm incidence in Indiana in 1950.

Iowa -- The survey made in August, mostly in the southern portion of the State, showed scattered to light screw-worm infestations in Audubon, Des Moines, Hamilton, Henry, Jefferson, Shelby, and Wapello Counties. Subsequent reports received from the State veterinarian and from the State entomologist extended the counties definitely known to be infested to include Monroe, Plymouth, and Story. In addition, the State Entomologist, H. M. Harris, received reports of the presence of screw-worms in 21 other counties in Iowa. Dr. Harris stated that some of these reports may actually have applied to wool maggots.

Kansas -- Some of the counties in the eastern and south-central parts of the State were surveyed during the latter part of July. Light infestations were found in Butler, Kingman, McPherson, Neosho, Pratt, Rice

and Saline Counties. In the southwestern portion of the State, which was surveyed later in the season, light infestations were present in Finney, Ford, Ness, Scott, and Seward Counties.

E. J. Frick, head of the Department of Surgery and Medicine, School of Veterinary Medicine, Kansas State College, stated that their clinic had screw-worm-infested animals brought in from Jackson, Pottawatomie, Clay, Riley, Washington, Geary, Dickinson, Wabaunsee, Shawnee, Morris, and Marion Counties.

The final data for Kansas, as given in county agents' narrative reports at the end of the year, were compiled by Dell E. Gates, Extension entomologist. This report lists 59 counties as lightly infested and 21 additional counties more heavily infested than normally expected. Only 25 of the 105 Kansas counties were reported not infested during the 1950 season, and nearly all of them were located in the northern half of the State. L. C. Williams, Director of Extension, stated that "the State records indicate approximately twice as many animals were treated for screw-worms in 1950 as in 1949."

Louisiana -- Infestations ranging from 1 to 1.75 percent of the total domestic-animal population were present late in October in Claiborne, Bienville, Richland, Caldwell, Winn, Natchitoches, Grant, St. Landry, Lafayette, Jefferson Davis, and Calcasieu Parishes. All these parishes reported infestations of 2 percent or more at the peak of the season, which occurred in the latter part of August and early in September.

A report by the State Veterinarian, F. B. Wheeler, who had contacted the agents in 31 parishes well scattered throughout the State, indicated that screw-worm infestations in all but one of these parishes were heavier in 1950 than in several previous years. Only St. Tammany Parish reported no infestations during the season.

Minnesota -- A survey in a few counties in Minnesota early in August revealed no screw-worm infestations, except in one dog which was imported into Watonwan County from Texas in June. At the end of the season, according to T. L. Aamodt, State entomologist, two cases of possible infestation were reported from Martin County, one from Steele County, and one from Goodhue County. Dr. Aamodt stated that "no larvae were obtained for identification and confirmation of these cases as due to Callitroga americana was therefore impossible."

Missouri -- The July survey was confined to the more important livestock counties. At that time only Jackson and Vernon Counties were found to harbor infestations of the screw-worm. Other counties reported infestations, but they were found to be other species of blowflies. At the end of the year V. F. Burk, Extension entomologist, submitted

a list of counties reported by county agents as infested with blowfly maggots or screw-worms and the month when the infestation was first noted. This report records the first appearance of either worms or screw-worms in 1 county in March, 10 counties in April, 6 in May, 8 in June, 13 in July, 9 in August, 5 in September, and 3 in October. All infestations reported for June to October were probably due to the true screw-worm, but all those found earlier were thought to be due to other species. Most of the counties reporting infestations are in the western half of the State.

Nebraska -- No infestations were found in the July survey in counties surrounding Omaha, where many cattle and sheep from various western and southern States are constantly received for slaughter. At the end of 1950 E. P. Anderson, State Veterinarian, had received only two reports of screw-worm infestations. According to Jack W. Lomax, Extension entomologist, there were many reports of screw-worms in the southeastern quarter of the State. He stated that "the infestation appeared about mid-August and built up into the first of September. The counties known to have had infestations are Richardson, Pawnee, Gage, Johnson, and Nemaha, with a few of the bordering counties reporting occasional infestations." Reports of screw-worm infestations in northeastern Nebraska were investigated by Extension workers, but were found not to be due to true screw-worms.

New Mexico -- The early survey in this State revealed that the screw-worm survived the winter in Dona Ana, Grant, and Hidalgo Counties and probably also in Luna County. When the State was resurveyed late in September, screw-worm infestations were reported in all counties in the State except those in the northwestern quarter. F. L. Schneider, State veterinarian, stated that only Valencia, McKinley, San Juan, Taos, Rio Arriba, and Sandoval Counties, all in the northwestern part of the State, apparently remained free of screw-worm infestations during 1950.

Oklahoma -- Although the screw-worm survived the winter in three Texas counties bordering Oklahoma, no evidence was found that the fly overwintered in this State. Scouting late in the season revealed light to medium infestations in all counties surveyed. At the time of the last survey, in October, probably every county in the State was infested. County agents and others reported that the peak of the infestation throughout Oklahoma occurred in September, when the incidence was approximately 1 to 1.5 percent of the total domestic-animal population. It is common almost every year for every county in Oklahoma to be infested with screw-worms.

South Dakota -- Contacts with State and Extension personnel and scouting in the area where the heavy screw-worm outbreak occurred last year indicated no infestations in the State up to the last of July. Late in October H. C. Severin, head of the Entomology-Zoology Department of the South Dakota State College at Brookings, reported that larvae removed from wounds of domestic animals and identified by him revealed that Callitroga americana was present in Ziebach, Sully, Hughes, Jones, Hanson, McCook, and Hutchinson Counties. The infestations in the first four counties were in the same area in which the 1949 outbreak occurred. Dr. Severin stated that all the cases of screw-worms occurred in September and early October and that the heaviest infestation this year was around Emery in Hanson County. Cold spells during the latter part of October stopped activity of the fly in all counties.

Texas -- The early survey in Texas indicated that it was necessary to survey most of the State because of the tremendous area in which the fly survived. Usually the screw-worm fly overwinters in only about 15 to 20 counties in the southernmost part of the State, whereas last winter the fly was found to breed all winter in 132 counties. The overwintering area extended north to the Oklahoma State line in central north Texas, or approximately 300 miles farther north than usual, and also about 200 miles farther northwestward than during previous years. Subsequent reports from various sources confirmed the presence of screw-worms in every county in Texas before midsummer. In October, when a few counties in southeast Texas were surveyed; heavy infestations were still present in all counties scouted. Screw-worms were active up to about December 1 in the vicinity of Kerrville, Tex., but not later. It is indicated, therefore, that the overwintering area of the fly will again be confined to the southernmost counties in Texas and comparable in extent to that of previous normal winters.

Screw-worm Remedies -- Ample supplies of smear 62 and various proprietary remedies were found on the local market in all States in the western region. Reports received from manufacturers of screw-worm remedies indicated a heavy demand for smear 62 in the western region, but particularly in Texas and Oklahoma. The Department of Agriculture's new screw-worm remedy EQ-335 (U. S. Bur. Ent. and Plant Quar. 1951), which was announced on October 23, was used by several ranchmen in Texas late in the season. The results were greatly superior to those obtained with smear 62 or any other remedy previously available.

Reports from manufacturers and livestock owners indicate that this new remedy will be in great demand during the next season in the western part of the United States.

Literature Cited

Division of Insects Affecting Man and Animals

1951. EQ 335 and other wound treatments for screw-worm control.
U.S. Bur. Ent. and Plant Quar. E-813, 6 pp. [Processed.]

CIRCULATE & RETURN

Southern Region
Tobacco Research Laboratory
Route 2, Box 16G
Oxford, North Carolina 27565

RECEIVED APR 16 1976

April 12, 1976

Jim
in
Copied - A lot
one trapping in the back
Jim
Subject: Screwworm Outbreaks and Surveys

To: D. L. Williams, Chief Staff Officer
Screwworm Eradication Program
USDA-APHIS
Federal Center Building
Hyattsville, Maryland 20782

Several weeks ago you inquired about a severe screwworm outbreak in 1951 in South Dakota. Enclosed are copies of scattered reports and correspondence from 1936 to 1952 which may be of interest. You will note a confirmed report of screwworms being shipped into South Dakota in 1951 but unfortunately I find no further information on it. However, a severe infestation did occur in 1949.

Best regards,

A. H. Baumhover
Research Leader
Tobacco Insects

Enclosures

cc:

D. A. Lindquist (with copies)

J. W. Snow ← " "

RECYCLE & RETURN

RECEIVED APR 1 8 1976

Southern Region
Tobacco Research Laboratory
Route 2, Box 166
Oxford, North Carolina 27565

April 12, 1976

Copy to Mr. Williams - A lot in the back

Subject: Soreworm Outbreaks and Surveys

To: D. L. Williams, Chief Staff Officer
Soreworm Eradication Program
USDA-APHIS
Federal Center Building
Havastville, Maryland 20782

Several weeks ago you inquired about a severe soreworm outbreak in 1951 in South Dakota. Enclosed are copies of scattered reports and correspondence from 1936 to 1952 which may be of interest. You will note a confirmed report of soreworms being shipped into South Dakota in 1951 but unfortunately I find no further information on it. However, a severe infestation did occur in 1949.

Best regards,

A. E. Baumbach
Research Leader
Tobacco Insects

Enclosures

cc: D. A. Lindquist (with copies)
J. W. Snow →

SCREW-WORM SURVEY FOR THE WESTERN AREA OF THE
UNITED STATES FOR SEPTEMBER, 1950

E. W. Laake
U. S. D. A., Agr. Res. Adm.
Bureau of Entomology and Plant Quarantine

During the month of September the Kerrville, Texas station of the Bureau of Entomology and Plant Quarantine, United States Department of Agriculture, made a screw-worm survey in the states of Indiana, California, Arizona, and New Mexico.

In each state the Bureau scout contacted the director of extension or his assistants, the state livestock extension specialist, the state entomologist, and the state veterinarian and county agents in all counties which were surveyed.

Particular emphasis was placed on surveying counties or areas which had reported screw-worm infestations or which had imported animals from known screw-worm-infested areas during the season. In most of the states surveyed during the month, only a relatively small number of the important livestock counties were scouted. The screw-worm incidence and distribution as revealed by the survey are given separately for each state as follows:

Indiana:

Scattered to light infestations were found in Owen, Greene, Lawrence, Daviess Pike, Ripley, and Tippecanoe Counties. The infestation in Ripley County is the most northeastern infestation found in the western area of the United States. No infestations were reported or found in Porter, Benton, or Knox Counties.

As a result of last year's experience, when a mild screw-worm outbreak covered most of the southern part of the State, livestock owners have this year diminished the spread and abundance of this pest by using screw-worm smear on practically all cuts and other predisposing causes as a prophylactic treatment. The low screw-worm incidence in Indiana this year is probably due to this preventive practice for screw-worm control.

California:

Screw-worm infestations involving approximately one-tenth of the total domestic animal population were found in Imperial, Riverside, Kern, and Tulare Counties. Scattered to light infestations were found in Stanislaus, Solano, Yolo, and Sonoma Counties. Apparently no screw-worms were present in several counties surveyed north of Sonoma and Yolo Counties.

Reports received from county agents, veterinarians, and livestock owners in Riverside and Imperial Counties indicated that screw-worms have been active in these counties the year around. An earlier survey in California this year revealed that the screw-worm fly survived the last winter in both Riverside and Imperial Counties.

Summer Spread 1950

Arizona:

True screw-worm infestations this season were reported from all counties in the State. Infestations involving somewhat less than one percent of the domestic animal population were reported in all of the southern counties. Live-stock owners in Yuma, Pima, and Pinal Counties reported screw-worm cases as being present the year around.

In the northern part of the State infestations were reported to be quite light and present only during the summer season.

New Mexico:

All counties in the southern and eastern half of this state were found to be infested. The heaviest infestation, involving 0.75-1.0 percent of the domestic livestock population, was found in the central eastern and southeastern portion of the State. Only light infestations were found in the southwestern counties.

Reports indicated that the heavier infestations in the southeastern portions of the State developed only recently and apparently as a result of unusually favorable weather for the development of screw-worms.

Screw-worm Remedies:

Screw-worm Smear U. S. Formula 62 and a number of proprietary preparations were found to be available in ample quantities in all areas surveyed. It was found that a considerable portion of the screw-worm remedies, sold in each area of the states surveyed, was used as a prophylactic treatment to prevent screw-worm infestations in man-made or natural wounds. This commendable practice has undoubtedly been responsible for greatly reducing the screw-worm spread and incidence in the western area of the United States this season.

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH ADMINISTRATION
BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE
WASHINGTON 25, D. C.

May 8, 1951

To: E. W. Laake, Box 232, Kerrville, Texas

From: E. F. Knipling, In Charge, Division of Insects
Affecting Man and Animals

Subject: Report of Screw-worm Infestation in South Dakota

I am sure you will be interested in the attached letter of May 3 from M. M. Davis, veterinarian in charge, Pierre, South Dakota, to Dr. Simms regarding a shipment of screw-worm infested animals from Phoenix to South Dakota.

I hope that Dr. Davis secured specimens from these animals to be certain that infestations were screw-worms and not Phormia or some other blow fly. However, this case of shipment of wormy animals certainly emphasizes the need for adequate inspection and treatment of animals before shipment and after arrival at their destination.

E. F. Knipling

Attachment

C
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UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Administration
Bureau of Animal Industry
Local Office

C
O
P
Y

Pierre, South Dakota
May 3, 1951

AIR MAIL

Dr. B. T. Simms
Chief, Bureau of Animal Industry
Washington 25, D. C.

Dear Dr. Simms:

Subject: Screwworms in Cattle

This is to notify you that 510 head of yearling and two-year-old Holstein steers shipped from Phoenix, Arizona, Saturday, April 28, 1951, arrived at Fort Pierre, South Dakota, this morning, and are infected with screwworms. One-third of these steers were dehorned about one month ago and are not healed yet. Several have screwworms in the head where the horns were cut off. Mr. Edwin Karlen, Columbia, South Dakota, is the shipper and receiver.

The cattle are being held and treated in Fort Pierre, South Dakota, at the railroad stockyards.

Very truly yours,

/s/ M. M. Davis

M. M. Davis
Veterinarian in Charge

*May 8
Mr. Tooke's info.
Sincerely,
MMD*

SCREW-WORM SURVEY FOR THE WESTERN AREA OF THE
UNITED STATES, MAY AND JUNE 1951

E. W. Laake
U. S. D. A., Agr. Res. Adm.
Bureau of Entomology and Plant Quarantine

Screw-worm infestations were found at Pierre, South Dakota, in cattle shipped interstate from Arizona early in May. The first report of the interstate shipment of screw-worm-infested animals was made by Dr. M. M. Davis, Veterinarian in Charge, B.A.I. Local Office, Pierre, South Dakota, in a letter dated May 3 to Dr. B. T. Simms, Chief, B.A.I., Washington, D. C. Dr. Davis, in his letter to Dr. Simms, stated that "510 head of yearling and two-year-old Holstein steers shipped from Phoenix, Arizona, Saturday, April 28, 1951, arrived at Fort Pierre, South Dakota, this morning and are infested with screw-worms. One-third of these steers were dehorned about one month ago and are not healed yet. Several have screw-worms in the head where the horns were cut off."

On May 11, Dr. H. C. Severin, Head of Entomology-Zoology Department, South Dakota State College, Brookings, South Dakota, wrote us as follows: "I am sure you will be interested in learning that there are being shipped into South Dakota quite a number of southern cattle. We had about 1400 head shipped into the Firesteel area in one trainload about a week and a half ago. The veterinarian that inspected these cattle found some maggots in some wounds which he brought to us. We identified these as secondary and not primary. Last Saturday, 510 head of cattle were shipped into Fort Pierre from Arizona. Many of these cattle had been dehorned shortly before they were shipped north. The veterinarian that inspected these cattle informed me that he found 8 head infested with maggots and when he brought the maggots to me, we identified them with certainty as screw worm maggots. The cattle were treated with smear 62 and all other wounds infested or not were treated with smear 62. Whether or not any of the screw worms dropped out from the infested wounds before the wounds were treated, I don't know. However, the county agent, State Veterinary Department, the Extension Department, and all others interested have been alerted to the fact that screw worms were again brought into South Dakota and this time at a very early date."

In a subsequent letter Dr. Severin stated that at least one infested animal harbored full-grown screw-worms when it arrived at Fort Pierre.

It was thought that possibly some of the larvae had already dropped before the animal was treated. In that event it is likely that screw-worms will be found in wounds of animals in the Fort Pierre area as soon as adult screw-worm flies have developed from the larvae which escaped from the wound of the infested animal before it was treated.

We have not yet scouted in South Dakota, but we are standing by ready to scout any infested area should one develop in this State this season.

During the period of May 15 to June 15 the states of New Mexico, Oklahoma, Kansas, and Missouri were surveyed. Special attention and time were devoted to those counties in each state that had recently imported animals from areas where screw-worms were present when the animals were moved. The counties surveyed in each state were only those which were selected by state extension personnel and which they thought were most apt to be infested this early in the season. The counties scouted and the results of the survey are briefly given for each state as follows:

New Mexico

At least a few true screw-worm cases were found in Dona Ana County. This infestation was very light and apparently had just started in this County. No screw-worms were reported or found in Luna, Hidalgo, Grant, Otero, Eddy, Lea, Chaves and Socorro Counties, which indicated that no screw-worms are present in counties north of those listed above.

Oklahoma

From May 15 to June 2 the following counties in Oklahoma were surveyed: Pawnee, Noble, Kay, Osage, Washington, Nowata, Craig, Rogers, Muskogee, Haskell, Pittsburg, Latimer, LeFlore, Pushmataha, Choctaw, McCurtain, Atoka, Jefferson, Stephens, Comanche, Beckham, Dewey, Ellis, Woodward, Texas, Cimarron, Beaver, Harper and Woods. Mr. Hugh Alford, our Bureau scout who surveyed Oklahoma, received a number of reports of worm infestations in animals which were thought to be true screw-worms. Most of these were in recently dehorned cattle and were found to be due to secondary species of blow flies, mostly Phoomia regina. No true screw-worm cases were found in any of the counties surveyed in Oklahoma up to June 2.

Kansas

The following counties in Kansas were surveyed during the period of May 29 to June 6: Osborne, Anderson, Franklin, Chase, Lyon, Crawford, Neosho, Labette, Montgomery, Elk, Cowley and Sedgwick. No screw-worms were found in any of the counties scouted during this period. Reports of screw-worms in several counties scouted were found to be due to P. regina, the black blow fly, and not C. americana, the screw-worm fly.

Missouri

Livestock Extension Specialists at the University of Missouri requested that the following counties be surveyed in order to determine if screw-worms had been imported with animals recently brought into the State from screw-worm-infested areas in the south: Saline, Clay, Carroll, Chariton, Platte, Clinton, DeKalb, Buchanan, Nodaway, Jackson, Bates, Vernon, Jasper, Lawrence and Greene. No screw-worm infestations were found in any of the counties scouted in Missouri up to June 15th. The early worm cases reported were apparently all due to secondary species of blow flies.

Screw-worm Remedies

Ample stocks of screw-worm remedies, especially U.S. Formula 62, and EQ-335 were found in all areas scouted in Oklahoma, New Mexico, Kansas and Missouri. The amount on hand was found to be sufficient for almost any emergency that may arise at this time of the season. Reports we are receiving on EQ-335 indicate that this new remedy is superior to any other remedy on the market and that livestock owners like it better than any of the older remedies.

P. O. Box 232
Kerrville, Texas

August 24, 1951

AIR MAIL

To: E. F. Knipling, In Charge, Division of Insects Aff. Man
and Animals

From: R. C. Bushland, Acting in Charge

Subject: Screw-worm Survey

Our screw-worm scouts have not traveled any during this fiscal year but have been engaged in research activities of the station and are considered on stand-by basis awaiting word of an outbreak in the northern states. We have no northern reports on screw-worms except Professor Severin's letter early in the spring telling of screw-worms in a shipment of imported cattle, which were apparently eradicated by the initial treatment.

As far as the routine survey is concerned, it appears that we can get just as much information at far less expense by sending a questionnaire to county agents as we can by having scouts make personal calls on county agents and insecticide dealers.

I would like to write letters to the Directors of Extension, Extension Entomologists, State Entomologists, and State Veterinarians in the area covered by our survey, telling them that we do not plan to send scouts to their states this summer if their screw-worm experience is merely routine. If they are experiencing any outbreak on which they need our assistance, we will be happy to dispatch men to make surveys and give all possible assistance. I would like, further, to ask permission of the Director of Extension for us to send a simple questionnaire to each county agent to supply the information normally obtained by personal contact. We could map the infestations from the questionnaires and in case of seriously conflicting data a scout could travel to the questionable area for a thorough study to establish the screw-worm situation. Of course, for such critical items as over-wintering survey and a prediction of spring migrations, we would still send scouts to the field.

Would you please advise whether such a program meets with your approval, and if it does I would like your suggestions for the questionnaire.

RCBushland:mb

RESULTS OF SCREW-WORM SURVEY JANUARY 1950-MARCH 1951



SUMMARY OF SCREWORM (COCHLIOMYIA AMERICANA) ACTIVITY

FOR THE YEAR 1939.

The overwintering of the screwworm fly, Cochliomyia americana, in Texas was restricted mostly to a very small area in Kinney, Val Verde, and south Edwards counties by very dry conditions during the latter part of the summer of 1938, and continuing through the winter and spring of 1939. The winter trapping peak population at Brackettville was 153 females in December 1938. Comparative population of the fly on the escarpment from January 1 to April 15 for a total of all C. americana taken was 39 adults for 1939 and 248 for 1938. The spring build-up from this population reached a very high peak north of Brackettville of 1,044 females, trap period ending June 30. Migration is indicated to have reinfested the area east on the escarpment about one month later than normal and a light infestation reached Lufkin, Texas, the last days of August. Migration north into the Oklahoma area was only slightly slower than normal. The flies reached Buffalo, Oklahoma, in late August, but none of the area south to the Balcones escarpment was heavily infested, there being practically no cases in much of the area during the entire summer.

The very hot, dry summer of 1938 practically exterminated the fly south and east of Uvalde on the Gulf Coast Plain to near the Gulf Coast. This area may have been reinfested partly by the overwintering area at Brackettville and partly by the overwintering area

about San Perlita, on the lower Gulf Coast Plain. None of this area had any considerable spring build-up peak. The highest peak of 196 females was reached on April 15 at San Perlita. In the general area between San Perlita and Brackettville areas no place is indicated to have had more than 50 adults per trap period during the summer or fall. A high fall peak was built up along the escarpment. This peak was reached with 1,356 females per trap period north of Brackettville October 15, and for the eastern escarpment at Kerrville on the same date with 697 females. The peak population on the lower Gulf Plain was 70 females at San Perlita on October 30, and decreased to 35 on December 1; other areas had less than 10 flies per trap period.

The fall decrease on the escarpment has been slightly greater this fall than last, being from 4,077 adults to 134 in the general trapping area from October 1 to December 1 — practically 97%. Last year the decrease was from a peak of 1,736 females to 65, or 96%, for the same period.

At the first of December this year there was a general infestation of about normal over the entire lower escarpment and a general light infestation over the entire Gulf Plain.

The outlook December 1st is rather favorable for a high overwintering population, especially if the population developing should warm days appear in December and January. There is also a very favorable condition existing for the reinfestation of very extensive areas next spring from the general overwintering population. This

favorable condition has been brought about by rather general rains over practically the entire escarpment area and Gulf Coast Plains except along the lower eastern Gulf Plain.

While we have no data as to fly populations in Florida, the weather conditions have been studied, and it was indicated that there was a very favorable condition for C. americana build-up during the fall and winter of 1938 and 1939, and a very favorable condition for a spread of this fly into Georgia, South Carolina, and Alabama. During the early summer and continuing until September rainfall conditions became unfavorable in most of the southeastern area, but December 1st quite favorable conditions are prevailing for overwintering of the fly.

We have only meager reports of fly populations during the summer from Arizona. These indicate that there has been a very low population of the fly. Weather conditions have been very unfavorable, most of the area has been practically without rainfall during the last 12 months. Rainfall conditions were relieved during the latter part of the fall but too late for any increase of C. americana.

D. C. Farman/vs

Uvalde, Texas.

December 19, 1939.

Box 509
Uvalde, Texas
December 19, 1939

Dr. F. C. Bishopp,
Bureau of Entomology and Plant Quarantine,
Washington, D.C.

Dear Dr. Bishopp:

We are enclosing three copies of a statement of screwworm fly activity for the year 1939, as indicated by our work.

During November we have worked up the records on the trapping and will have these practically completed at an early date. At the present time we have status traps in the following areas as indicated:

West Escarpment:

Spofford
Quemado Valley
Sycamore Creek
Del Rio
Kickapoo Springs
Rock Springs
Sonora

Rio Grande Valley:

Rio Grande City
Zapata
Laredo

Central Escarpment:

Uvalde
Dooley #1
Dooley #2
Schwandner
Camp Wood

Gulf Plain:

Fleasanton
Cuero
Victoria
La Ward
Sinton
Sarita
Encino
San Perlita
Red Fish Bay
Cotulla

Eastern Escarpment:

Friertown
Pipe Creek
Kerrville
Menard

Mr. Brundrett has made rather heavy installments of overwintering *Cochliomyia* specimens both in the large cages and in the small cylinder cages. We have the small cylinder cages arranged this year in such a way that we can obtain rather definite data as to emergence and possible carryover under the different conditions, which I believe will give us rather accurate data on any severe weather that we may have during the winter, and also a more accurate determination of the percentage of carryover under winter conditions.

Very truly yours,

DCP:vs
encls.

D. C. Parman, Assoc. Entomologist

*Ribbon copy
of 2nd run*

SPECIAL REPORT

SCREWWORM SURVEY OF THE WESTERN AREA OF THE UNITED STATES IN 1946

E. W. Laake

The primary object of the survey was to determine the extent and intensity of screwworm infestation in Western United States and the amount of critical insecticide needed for controlling this pest. However, it actually served a much broader purpose by introducing screwworm Smear 62 in northern areas where livestock owners, and even extension personnel, were unfamiliar with the potential dangers of this pest or with the best means for controlling it. The survey was begun in the overwintering areas in Texas and in Arizona. It revealed that the area in which the screwworm fly overwintered in Texas during the 1945-46 season comprised 25 counties in the southernmost portion of the State. The overwintering area extended from Cameron County, the southernmost county in the State, northward along the Gulf to Nueces County and then northwestward thru Live Oak, Atascosa, Medina, Uvalde, Kinney and Val Verde Counties to the Rio Grande River on the west. All counties lying south of these counties were in the overwintering area. In Arizona, the overwintering area was confined to all or at least portions of Yuma, Maricopa, Pinal, and Pima Counties. In California, the overwintering area was probably limited to Imperial County.

OW 45-46
SP 46

Total western area infested during 1946: As a result of the normal migration of the fly or the transportation of infested animals to other states, the total area that became infested during the year included all counties in Arizona, Arkansas, Kansas, New Mexico, Oklahoma and Texas, and at least six counties in California, 18 in Colorado, 40 in Illinois, 14 in Iowa, 22 in Louisiana, 80 in Missouri, and 11 in Nebraska.

Intensity of infestation in 1946: The intensity of the screw-worm infestation in the western area was light to moderate in most of the 13 affected states except in Texas, New Mexico, Missouri, and Illinois, where heavy infestations were encountered. The heavily infested area in Texas, consisting of at least 100 counties, extended from Grimes and Limestone Counties in the Southeastern portion of the State to Presidio and Pecos Counties in the western portion, and northward to at least Carson and Gray Counties in the Panhandle. The survey showed that the trend of the heavy infestation from the overwintering area moved northwestward across the 100th Meridian into the Panhandle. In New Mexico only one county, namely, Union, the northeasternmost county in the State, was found to be heavily infested. In Missouri a heavy infestation was found in 12 counties in the northwestern portion of the State, and in Illinois 2 counties, namely, LaSalle in the northeastern portion and St. Claire in the southwestern portion were found to be heavily infested. The survey in Oklahoma and Kansas was made early in the season before the heavy infestation in at least some of these counties usually develops. It is quite likely, therefore, that if the survey had been made later in the season, heavily infested counties would have been found in these two states.

The infestation in the 12 severely infested counties in Missouri was one of the most serious ones on record. The outbreak was apparently centered in Carroll County, from which it extended to the east, south, and southwest. The county agent of Carroll County reported that screwworms began to appear early in the season and he estimated that there were 20 or 25 thousand cases in the county during the season. He reported that one farmer who owned 1,000 lambs had 100 cases, mostly in shear cuts, and at least one-half of the infested animals died as a result of screwworm infestation. Another farmer lost at least 60 pigs due to infestations in the pigs' navels, noses, ears, and in accidental cuts. Still another farmer reported that it was necessary to watch over his pigs every day to control the worms and he stated that he was practically living with them in order to save them. According to reports from the county agent and local veterinarians, it appears that the infestation in Carroll County started in the middle of April when infested animals from the South were imported. The infestation increased until it had apparently reached its peak in the latter part of September and during the first two weeks in October. The infestation in Carroll County was estimated at 5 percent of the total animal population in the county. In the 11 other heavily infested nearby counties the incidents were estimated to be from 2 to 3 percent of all domestic animals.

The total number of screwworm cases in all of the infested counties in Missouri was estimated to be at least 55,000. According to county agents and local veterinarians in the severely infested areas, it was probably the most severe outbreak on record in Missouri.

the importation of infested cattle and that the infestations in these states could be prevented if restrictions were enacted inhibiting the interstate transportation of infested animals.

SCREW-WORM SURVEY IN WESTERN UNITED STATES, 1949

E. W. Laake*

U. S. D. A., Agr. Res. Adm.
Bureau of Entomology & Plant Quarantine

The annual survey of screw-worms, Callitroga americana (C. & P.), conducted by the United States Bureau of Entomology and Plant Quarantine in cooperation with state extension specialists was continued in most of the usually-affected states in Western United States during 1949. The early scouting was confined to Texas and Arizona to determine the winter-survival area of this insect. This fly does not over-winter in any other state west of the Mississippi, except possibly in Southern California.

The early survey failed to reveal the survival of the screw-worm in Arizona in domestic animals, but subsequent scouting indicated that the insect survived the winter in Southern Arizona, apparently from infestations in wild animals. In Southern Texas the winter-survival area was found to extend at least as far north as Kendall County, just north of San Antonio. Screw-worm infestations in domestic animals were also reported throughout the winter as far north as Kenny County, on the Rio Grande River, along the western border of the State, and at least to Refugio and Bee Counties along the eastern coast of the State. The winter-survival area in Texas was somewhat larger and extended farther north than usual in spite of the coldest winter temperatures recorded in this area since the survey was inaugurated in 1943. The 1948-49 winter survival of the fly farther north than usual was indicated to be due to the well-timed periodical warm periods which prevailed precisely at intervals during the winter when they were critical for adult activity and the continuation of the life cycle of the screw-worm.

The population of screw-worms which survived the 1948-49 winter in South Texas was definitely greater and more widely distributed than during any winter since the survey was started. In addition, Texas subsequently had an excellent all-season environment for screw-worm development due to frequent and abundant precipitation, especially throughout the usually drier areas of the State which otherwise check screw-worm breeding considerably during the summer. This combination of factors so favorable for screw-worm development resulted in one of the heaviest and most destructive screw-worm seasons the State has experienced in many years. Similar favorable weather conditions in Arizona and New Mexico also resulted in a heavy screw-worm incidence later in the season in some areas of both States.

Early season scouting in Louisiana, Arkansas, and Oklahoma revealed only light to moderate infestations in selected livestock counties well scattered throughout these states. Later in the season, however, Oklahoma reported a heavy screw-worm incidence in the western part of the State, principally along the Texas panhandle.

* Presented at Texas Entomological Society Meetings, Houston, Texas, January 19-20, 1950.

OW 48-49

Kansas and Missouri were surveyed during midsummer. Scattered light to moderate infestations were found in 24 of 37 counties scouted in Kansas. Nearly all the infested counties were located in the eastern half of the State, in the Flint Hills grazing area into which several hundred thousand southern feeder cattle are imported early each season for grass fattening during the spring and summer. The screw-worm infestations in some of the Kansas counties were still confined to definitely isolated areas within the affected counties. This is a common occurrence in this and other North Central States each year and is the result of early-season importation of screw-worm-infested animals. In Missouri 18 of 23 key counties well scattered over the State were found to be lightly to moderately infested. Here, too, the isolated infestations in various parts of the State resulted from importing screw-worm-infested animals. Reports received from veterinarians subsequent to our survey indicated that screw-worms invaded most of the counties in the western half of Kansas late in the season and caused considerable damage to livestock and expense for caring for the infested animals.

In Nebraska only seven of 21 counties located along the Kansas and Iowa borders were found to be infested rather late in the season, September, when the survey was made. Six of the infested counties were grouped around Omaha, where the National Stockyards and packing houses are located and which receive many southern cattle all season long. The other infested county was located in the extreme southeastern corner of the State. The infestations were light except in Douglas County, in which Omaha is located, and in the adjoining Sarpy County, in both of which a heavy infestation was reported. The Nebraska infestations undoubtedly resulted from the importation of screw-worm-infested animals from the South.

The survey in Iowa, also made late in the season, was confined to scattered counties in the southern part of the State and northeastward to Fayette County. A total of 17 counties were scouted, five of which were infested. Pottawattamie County, across the State border from Douglas County and Omaha, and Blackhawk County, in East Central Iowa, were reported as heavily infested. Both of these infestations, as well as the lighter infestations found in three southwestern counties, were the result of importations of infested animals earlier in the season.

Scouting in Illinois was limited to four counties in the southern part of the State, none of which were infested. A shortage of scouts and severe outbreaks of screw-worms in South Dakota and Indiana made it necessary to discontinue the survey in Illinois shortly after it was started.

South Dakota experienced one of the worst screw-worm outbreaks encountered since the survey was inaugurated in 1943. The outbreak resulted from the importation of possibly not more than two infested animals from Texas which were shipped directly to the vicinity of Van Metre, in Jones County, about the middle of May. The infestation became established and subsequently built up a fly population that spread over 15 counties and caused at least 13,000 cases of screw-worms by the end of August. The most seriously affected county was Jones, in which 15 per cent of the domestic animal population became infested by midsummer. It was estimated that more than 6,340 animals became

infested in Jones County before the fly was brought under control. Other counties seriously affected were Dewey, Haakon, Hughes, Jackson, Lyman, Mellette, Stanley, Sully, and Zieback. Other infested counties less seriously affected were Armstrong, Buffalo, Carter, Tripp, and Washabang.

The infestation in South Dakota spread over an area by the end of August measuring approximately 148 miles east and west and 125 miles north and south. In spite of heroic efforts by the livestock owners, who were not familiar with the control of the screw-worm when it first appeared but who soon learned to use Smear 62, the infestation in South Dakota was not eradicated until winter weather stopped adult activity.

Indiana became infested in May through the importation of a shipment of infested sheep from Oklahoma. The sheep were brought into Lawrence County, where the infestation became established and subsequently spread over 21 southern counties, 11 of which developed county-wide infestations ranging from 0.1 to 1.0 per cent of the total domestic animal population, and 10 counties had an infestation ranging from 1.0 to 2.0 per cent, which is considered a moderate to heavy infestation. The infestation generally was fairly well controlled because veterinarians, county agents, and especially the livestock owners did a splendid job in all working together and coordinating their efforts in an attempt to eradicate the infestation.

As a result of the heavy losses suffered by the livestock owners in South Dakota, state officials and representatives of livestock organizations called meetings of officials from all the North Central States at Omaha, Nebraska, for the purpose of establishing ways and means to stop the interstate transportation of screw-worm-infested animals into these states which would never become infested otherwise. It is hoped that these timely conferences will result in establishing ways and means effective for preventing the interstate shipment of screw-worm-infested animals into the North Central States. All these states have suffered so unnecessarily and so heavily during recent years.

The screw-worm survey, through the education and help it has given the livestock owners in the North Central States, has saved many valuable domestic animals and has paid for itself many times over in the good work it has done in these states alone.

File Copy

SCREW-WORM SURVEY FOR THE WESTERN AREA OF THE UNITED STATES
AREAS IN WHICH THE SCREW-WORM FLY SURVIVED THE WINTER

E. W. Laake
U. S. D. A., Agr. Res. Adm.
Bureau of Entomology and Plant Quarantine

The Bureau of Entomology and Plant Quarantine has completed the survey to determine the areas in which Callitroga americana (C. & P.), the true screw-worm, survived the past severe winter in the region west of the Mississippi River. The survey was confined to the southern counties in Texas, New Mexico, Arizona, and California because the screw-worm fly is not known to overwinter in any other areas in these States during such a severe winter as the last one and rarely, if ever, in any of the other states west of the Mississippi.

Intensive scouting in South Texas revealed that the fly survived the winter only in Cameron, Willacy, Hidalgo, Starr, Jim Hogg, Zapata, Webb, Dimmit, La Salle, and Zavalla Counties, located in the lower Rio Grande Valley and north-westward along the Rio Grande River into the "winter garden" area. All of these counties contain communities in which winter vegetables are produced under irrigation. The irrigation in these counties appears to have been responsible for providing favorable overwintering environments for the fly, because in adjacent counties in the same area but without irrigation the fly disappeared during the past winter. The ten counties in which the screw-worm fly overwintered comprise the smallest winter-survival area in Texas of any winter since 1943, when the screw-worm survey was inaugurated.

Considerable scouting in southern and particularly in southwestern New Mexico failed to find any evidence of winter activity of C. americana. Apparently the fly did not survive the last winter in any part of New Mexico.

In Arizona activity of the screw-worm throughout the winter was evident only in Yuma County; more specifically only in the irrigated Yuma Valley. The 1950-51 winter-survival area of the screw-worm in Arizona is also as small or smaller than that of any previous season since 1943.

In California the screw-worm fly survived the winter in Imperial County and in at least the eastern half of Riverside County. Only the Colorado River separated this area from the winter-survival area in Yuma County, Arizona. Intensive scouting in counties adjoining Imperial and Riverside Counties produced no evidence that indicated that the screw-worm survived the past winter in other Southern California counties.

Although the western area in which the screw-worm survived the past winter is smaller than usual, it certainly is not too small to prevent the spread of the fly to all of the usually affected states later in the season when this parasite migrates northward of its own accord and is also widely scattered by the interstate transportation of infested animals.

March 30, 1951

Survival 50-51

Screw-Worm Survey in Western United States, 1949²

E. W. LAAKE, U.S.D.A., Agri. Res. Adm.,
Bureau of Entomology and Plant
Quarantine

The annual survey of screw-worms, *Callitroga americana* (C. & P.), conducted by the Bureau of Entomology and Plant Quarantine in cooperation with State extension specialists was continued in most of the States usually affected in western United States during 1949. The early scouting was confined to Texas and Arizona to determine the winter-survival area of this insect. This fly does not overwinter in any other State west of the Mississippi, except possibly in southern California.

The early survey failed to reveal the survival of the screw-worm in Arizona in domestic animals, but subsequent scouting indicated that the insect survived the winter in southern Arizona, apparently in infestations in wild animals. In southern Texas the winter-survival area was found to extend at least as far north as Kendall County, just north of San Antonio. Screw-worm infestations in domestic animals were also reported throughout the winter as far north as Kinney County, on the Rio Grande, along the western border of the State, and at least to Refugio and Bee Counties along the eastern coast. The winter-survival area in Texas was somewhat larger and extended farther north than usual, notwithstanding the coldest winter temperatures recorded in this area since the survey was inaugurated in 1943. The 1948-49 winter survival of the fly farther north than usual was indicated to be due to the well-timed periodical warm spells, which prevailed at intervals during the winter, when they were critical for adult activity and the continuation of the life cycle of the screw-worm.

The population of screw-worms that survived the 1948-49 winter in southern Texas was definitely greater and more widely distributed than during any other winter since the survey was started. In addition, Texas subsequently had an excellent all-season environment for screw-worm development, owing to frequent and abundant precipitation, especially throughout the usually drier areas of the State, which otherwise checks screw-worm breeding considerably during the summer. This combination of factors so favorable for screw worm development resulted in one of the heaviest and most destructive screw worm seasons the State has experienced in many years. Similar favorable weather conditions in Arizona and New Mexico also resulted in a heavy screw-worm incidence later in the season in some areas of both States.

Early season scouting in Louisiana, Arkansas, and Oklahoma revealed only light to moderate infestations in selected livestock counties well scattered throughout these States. Later in the season, however, Oklahoma reported a heavy screw-worm incidence in the western part of the State, principally along the Texas Panhandle.

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tening on grass during the spring and summer. The screw-worm infestations in some of the Kansas counties were still confined to definitely isolated area within the affected counties. This is a common occurrence in this and other North Central States each year and is the result of early season importation of screw-worm-infested animals. In Missouri 18 of 23 key counties well scattered over the State were lightly to moderately infested. Here, too, the isolated infestations in various parts of the State resulted from importing screw-worm-infested animals. Reports received from veterinarians subsequent to our survey indicated that screw-worms invaded most of the counties in the western half of Kansas late in the season and caused considerable damage to livestock and also entailed expense for the care of infested animals.

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South Dakota experienced one of the worst screw-worm outbreaks encountered since the survey was inaugurated in 1943. The outbreak resulted from the importation of possibly not more than two infested animals from Texas which were shipped directly to the vicinity of Van Metre, in Jones County, about the middle of May. The infestation became established and subsequently built up a fly population that spread over 15 counties and caused at least 13000 cases of screw-worms by the end of August. The most seriously affected county was Jones, in which 15 per cent of the domestic animal population became infested in short order. It was estimated that more than 6340 animals became infested in Jones County before the fly was brought under control. Other counties seriously affected were Dewey, Haakon, Hughes, Jackson, Lyman, Mellette, Stanley, Sully, and Ziebach. Other infested counties less seriously affected were Armstrong, Buffalo, Meade, Pennington, Potter, Tripp, and Washabaugh.

By the end of August the infestation in South Dakota had spread over an area that measured approxi-

² Presented at the meeting of the Texas Entomological Society at Houston, Tex., January 19-20, 1950.

6w 48-49
53 49

mately 148 miles from east to west and 125 miles from north to south. Notwithstanding heroic efforts by the livestock owners, who were not familiar with the control of the screw-worm when it first appeared but who soon learned to use Smear 62, the infestation in South Dakota was not eradicated until winter weather stopped adult activity.

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As a result of the heavy losses suffered by the livestock owners in South Dakota, State officials and representatives of livestock organizations called meetings of officials from all the North Central States at Omaha, for the purpose of establishing ways and means to stop the interstate transportation of screw-worm-infested animals into those States, which otherwise would never become infested. It is hoped that these timely conferences will result in establishing effective ways and means for preventing the interstate shipment of screw-worm-infested animals into the North Central States. All those States have suffered unnecessarily and heavily during recent years.

The screw-worm survey, through the education and help it has given the livestock owners in the North Central States, has saved many valuable domestic animals and has paid for itself many times over in the good work it has done in those States alone.

Reprinted September 6, 1950 from
JOURNAL OF ECONOMIC ENTOMOLOGY 43:(3) :387

ID Document	1296		
Form 1	Survey Copy		
Form 2			
Title	Screw-Worm Survey in Western United States, 1950		
# of Pages	7		
Year	1951		
Month	July		
Day	5		
Color?	☐		
Spanish?	☐		
Subject line			
Subject heading 1	overwintering		
Subject heading 2	county extension agent		
Subject heading 3	wound treatment		
Subject heading 4			
Description Note			
Author Info	Laake		
Additional Authors			
Recipient			
Sub-collection	Screwworm Eradication Re		
Treatment intent	scan & index		
Temp CD folder	144		
To be scanned?	☒	Scanning completed?	☐
To be re-keyed?	☐	Re-keying completed	☐
Out at SIG?	☐	Group	H

ID Document	1297		
Form 1	Survey Copy		
Form 2			
Title	Highlights of 1944 Screwworm Survey		
# of Pages	4		
Year	1945?		
Month			
Day			
Color?	☐		
Spanish?	☐		
Subject line			
Subject heading 1	Smear 62		
Subject heading 2	wound treatment		
Subject heading 3	Southwest		
Subject heading 4			
Description Note			
Author Info	Johnston		
Additional Authors			
Recipient			
Sub-collection	Screwworm Eradication Re		
Treatment intent	scan & index		
Temp CD folder	144		
To be scanned?	☒	Scanning completed?	☐
To be re-keyed?	☐	Re-keying completed	☐
Out at SIG?	☐	Group	H

ID Document	1299		
Form 1	Report Copy		
Form 2			
Title	Statement to Dr. Laake Regarding Screw Worm Situatio		
# of Pages	4		
Year	1936		
Month	may		
Day	21		
Color?	☐		
Spanish?	☐		
Subject line			
Subject heading 1	larvae		
Subject heading 2	climate		
Subject heading 3	mating behavior		
Subject heading 4			
Description Note			
Author Info			
Additional Authors			
Recipient	Laake		
Sub-collection	Screwworm Eradication Re		
Treatment intent	scan & index		
Temp CD folder	144		
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To be re-keyed?	☐	Re-keying completed	☐
Out at SIG?	☐	Group	H

ID Document	1300		
Form 1	Survey copy		
Form 2			
Title	Screw-Worm Survey for the Western Area of the United		
# of Pages	3		
Year	[1950]		
Month			
Day			
Color?	☐		
Spanish?	☐		
Subject line			
Subject heading 1	Smear 62		
Subject heading 2	New Mexico		
Subject heading 3	South Dakota		
Subject heading 4	Kansas		
Description Note			
Author Info	Laake		
Additional Authors			
Recipient			
Sub-collection	Screwworm Eradication Re		
Treatment intent	scan & index		
Temp CD folder	144		
To be scanned?	☒	Scanning completed?	☐
To be re-keyed?	☐	Re-keying completed	☐
Out at SIG?	☐	Group	H

ID Document	1302
Form 1	News release
Form 2	
Title	Severe Screwworm Outbreak May Occur in 1950
# of Pages	2
Year	1950
Month	April
Day	19
Color?	☐
Spanish?	☐
Subject line	
Subject heading 1	survey
Subject heading 2	overwintering
Subject heading 3	climate
Subject heading 4	inspection
Description Note	
Author Info	U.S. Department of Agricult
Additional Authors	
Recipient	
Sub-collection	Screwworm Eradication Re
Treatment intent	scan & index
Temp CD folder	144
To be scanned?	☒
Scanning completed?	☐
To be re-keyed?	☐
Re-keying completed	☐
Out at SIG?	☐
Group	H

Memorandum

Veterinary Services

Hyattsville, Maryland 20782

SUBJECT: USDA Policy on Eradication of Screwworms
From Central America and Panama

TO: J. L. Hourrigan
Senior Staff Veterinarian
Sheep, Goat, Equine, and Ectoparasites

DATE: September 29, 1975

cc: Dr. Chaloux/Hell
FYI

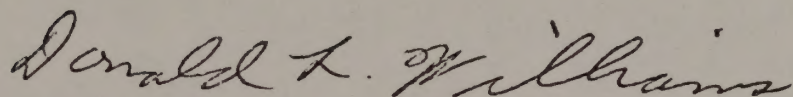
During my recent trip to the International Center for Tropical Agriculture (CIAT) near Cali, Colombia, I talked at length with two veterinarians about possible screwworm eradication programs in Central America and Panama. Both veterinarians, Dr. Felix Keller M., Central American Bank of Economic Integration, Tegucigalpa, Honduras, and Dr. Ernesto Amado G., Subdirector of Livestock Development, Guatemala, stated that screwworms were a serious problem to the livestock industry in Central America and indicated that they were both interested in trying to seek a program to eliminate this pest from Central America. I informed them that field surveys, feasibility studies, and cost-benefit analyses should be conducted prior to deciding upon a screwworm program.

Dr. Keller thought that if it was feasible to eradicate screwworms from Central America that his agency, the Central American Bank of Integration, would probably have a role in financing such a program. He also thought it might be more practicable for Central America to purchase sterile flies from Mexico than to attempt to build a sterile screwworm fly production plant in Central America.

In my opinion, the U.S. Department of Agriculture should encourage Central American countries and international agencies, such as Food and Agriculture Organization, U.S. Agency for International Development, and Pan American Health Organization, to eradicate screwworms from Central America by sharing our technical know-how with them. I believe our policy should be as follows:

1. After screwworms are finally eliminated from the United States, we should eradicate screwworms from Mexico as soon as possible.
2. We should encourage Central American countries to build a plant in Panama which would produce enough sterile flies to eradicate screwworms from Central America and Panama.
3. After eradication of screwworms is achieved in Mexico, Guatemala, Nicaragua, Honduras, British Honduras, and El Salvador, the plant in Tuxtla Gutierrez should be closed with much of the equipment "mothballed" and held in standby. A new barrier of sterile flies should be maintained in Southern Panama.

While most of the above information has primarily to do with long-range plans for screwworm eradication, the part that affects Central America, especially Panama, may be significant from the international point of view. The Department of State may wish to consider this information when they are developing their overall policies with Central America and Panama. When other problems, such as the Pan American Highway or control of the Panama Canal come up for discussion, perhaps it would be useful to the Department of State to consider the possibility of a screwworm eradication program in Central America as a part of the "big picture."



Donald L. Williams
Chief Staff Veterinarian
Screwworm Eradication

cc:

N. L. Meyer, APHIS-VS, Mexico City, Mexico
J. H. Wommack, APHIS-VS, Hyattsville, Maryland
M. E. Meadows, APHIS-VS, Mission, Texas

~~HOURLIGAN~~ (WILLIAM) ~~LA57~~
~~SCHUBERT~~
KLINGSPORN
~~KNOWLES~~ ~~SCOTT~~

Veterinary Services
Hyattsville, Maryland 20782

*Original forwarded
to Dr. O. O. O.
9-30-75*

USDA Policy on Eradication of Screwworms
From Central America and Panama

September 29, 1975

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COPY

J. L. Hourrigan

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M. E. Meadows, APHIS-VS, Mission, Texas

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With regard to the above information, the following is to be noted:
The above information was obtained from the records of the
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The information is for your information only and is not to be
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used for any other purpose. The Department is not responsible
for the accuracy or completeness of the information.

Very truly yours,
[Signature]

Special Agent in Charge
Bureau of Land Management
Department of the Interior

cc: Mr. [Name], [Address]
Mr. [Name], [Address]
Mr. [Name], [Address]

U.S. DEPARTMENT OF AGRICULTURE

Memorandum

ANIMAL AND PLANT HEALTH INSPECTION SERVICE

Veterinary Services

Hyattsville, Maryland 20782

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From Central America and Panama

TO: J. L. Hourrigan
Senior Staff Veterinarian
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DATE: September 29, 1975

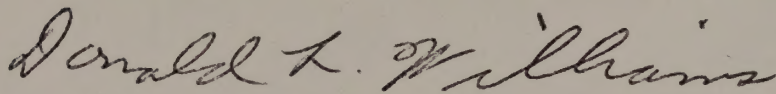
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J. H. Wommack, APHIS-VS, Hyattsville, Maryland
M. E. Meadows, APHIS-VS, Mission, Texas

Tap 8

DRAFT 8/13/80

138 SUBJECT: Mexico-American Screwworm Eradication Program
139 Audit No. 33605-4-FO, Supplement 1

140 TO: H. N. Sparks
141 Director, Foreign Operations Staff, OIG
142

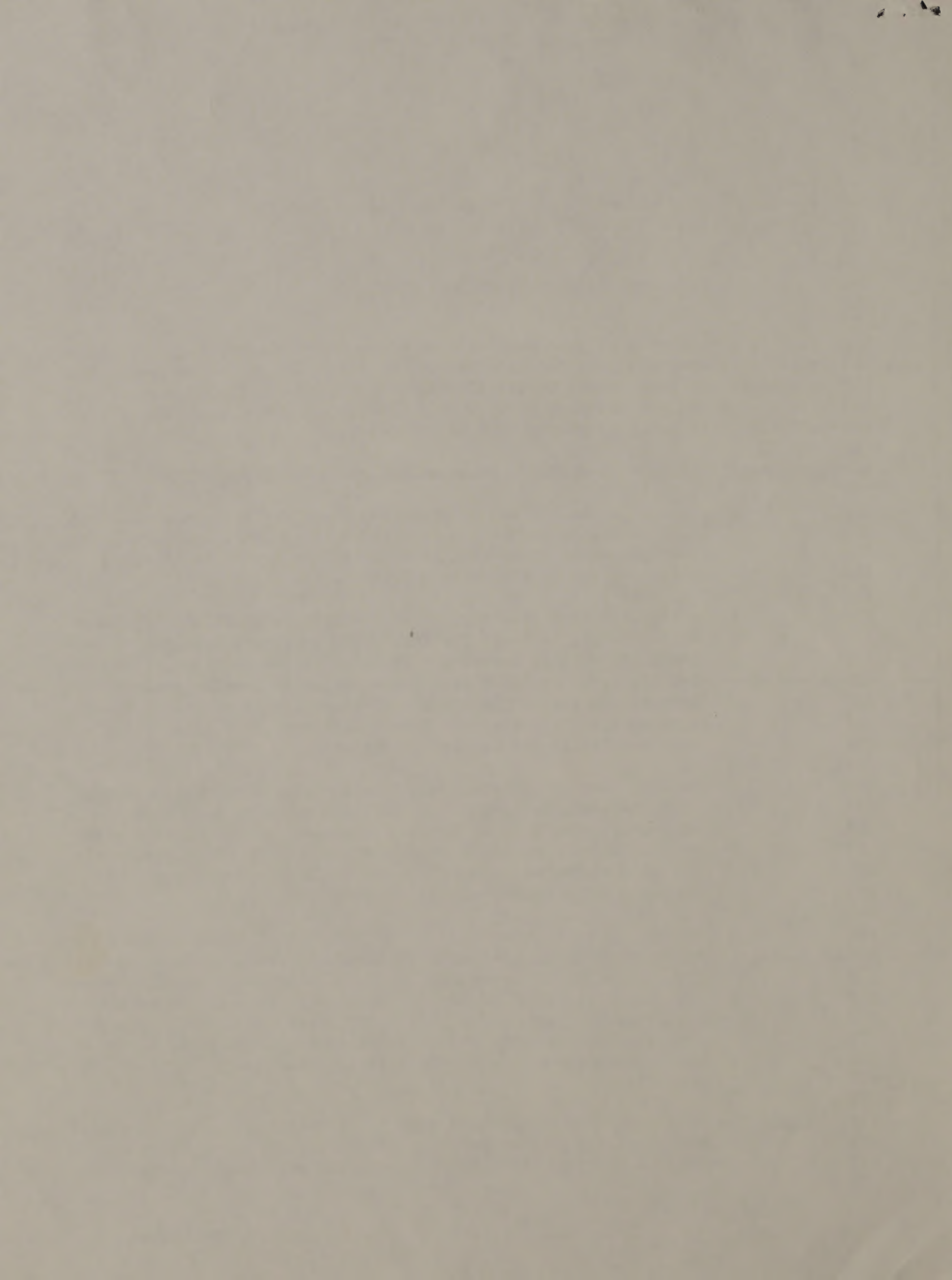
142 This is in response to your memo of June 10 on the above subject, and deals
143 with the recommendations for the Director of SEA. In general, we found that
144 the audit was very useful to the Administrators and scientists responsible
145 for conducting the research to support the APHIS screwworm eradication
146 program. The depth of your review is appreciated.

147 My response to your specific recommendations are as follows:

- 148 1. a. We are in the process of preparing plans for screwworm research
149 until 1985, including the facilities, equipment, and personnel
150 requirements. These will be submitted to Dr. T. B. Kinney,
151 Administrator of SEA/AR by October 1, 1980.
- 152 b. Action has been initiated to make available facilities at Fargo
153 North Dakota, to house the increasing screwworm research to be
154 conducted at that location. We anticipate completion of these
155 facilities by August 1981. These facilities will be temporary,
156 however, we are in the process of preparing plans for a permanent
157 structure. With regard to Tuxtla Gutierrez, the plans for the
158 required facilities are being developed.
- 160 c. We have been continuously coordinating with APHIS the personnel
161 needs for methods development and research with particular
162 attention being paid to Tuxtla Gutierrez. At the present time
163 we are in the process of developing methods by which personnel
164 can be transferred between SEA and APHIS. We anticipate that
165 satisfactory arrangements can be made.
- 166 d. We have given high priority to obtaining MODE slots to staff the
167 research activities required at Tuxtla Gutierrez. This has been
168 and is continuing to be done in coordination with APHIS. However,
169 because of the difficulties of conducting research and methods
170 development activities at Tuxtla Gutierrez, we cannot guarantee
171 that the research and methods development professional staff will
172 not increase over its current size at Mission plus Tuxtla
172 Gutierrez.
- 173 2. The data developed by University of Texas scientists on the genetics of
173 the screwworm fly is continuously reviewed by the appropriate SEA/AR
174 ~~and~~ scientists. We do anticipate one more year of funding for the
- 176

(continued)

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177 genetics group (providing funds are available) to assist us in conducting
178 a large field experiment to determine whether the theories proposed by
179 the UT group influence the efficacy of the sterile male technique
180 eradication program. Upon completion of this field experiment, we
181 anticipate that an evaluation will be conducted by SEA/AR, APHIS,
182 and non SEA scientists. Based on the results of this review, a
183 determination will be made whether to continue funding the University
184 of Texas research. Further, we have already made a decision to
185 develop inhouse expertise in the areas of population genetics and
186 isozymes. These are tools which are vital to many pest control
187 programs, including the screwworm program, and thus, we must have
188 inhouse expertise.

189 If you have any questions regarding the above comments, please direct them
190 to Dr. T. B. Kinney, Administrator, SEA/AR.

(for Bertrand's signature)

